In the Claims:

1. (Currently Amended) Catheter for the ablation of biological, in particular of animal or human, tissue, including ablation of human myocardial tissue, said catheter comprising:

at least one ablation or mapping electrode,

wherein the at least one ablation or mapping electrode has a reduced number of electrical interference centres which generate microscopic electric potential differences, field strength maxima or microscopically different reaction capabilities at the electrode surface and

wherein the at least one ablation or mapping electrode has an electrolytically treated surface

and wherein the surface of the at least one ablation or mapping electrode has a rounded surface structure whose edges or tips have a radius of curvature of more than 10 nm.

2. (Currently Amended) Catheter according to Claim 1, characterized in that the electrical interference centres, which generate electric signals particularly during the output of high-frequency energy to the at least one ablation or mapping electrode, are essentially arranged on surface regions of the at least one ablation or mapping electrode, and are reduced in their number, areal extent [[and/]]or electrical effect.

3. Cancelled

4. (Previously Presented) Catheter according to Claim 1, characterized in that the at least one ablation or mapping electrode has an electrolytically treated surface which is treated with a solution containing halogen ions, in particular chlorine ions.

5. Cancelled.

PAGE 4/11 * RCVD AT 2/25/2005 9:58:04 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5053230865 * DURATION (mm-ss):04-02

6. (Previously Presented) Catheter according to Claim 1, characterized in that the at least one ablation or mapping electrode comprises a metal whose atoms are present at the surface in a fashion bound at least partially atomically or in an amorphous manner and in an essentially non-crystalline manner.

7. (Previously Presented) Catheter according to Claim 1, characterized in that at least one ablation or mapping electrode comprises platinum.

8. (Previously Presented) Catheter according to Claim 7, characterized in that the surface of the at least one ablation or mapping electrode is coated at least partially with elementary platinum.

9. (Previously Presented) Catheter according to Claim 1, characterized in that the surface of the at least one ablation or mapping electrode comprises regions with deposited metal present essentially in an amorphous manner or atomically.

10. (Previously Presented) Method for producing a catheter with improved electrical properties, the method comprising the following steps:

providing a catheter which comprises at least one ablation or mapping electrode,

providing a vessel with a solution which contains ions whose motion can be influenced by an electrical field,

immersing the at least one ablation or mapping electrode in the solution,

providing a further electrode in contact with the solution,

treating the at least one ablation or mapping electrode, by applying an electric voltage between the ablation or mapping electrode.

11. (Previously Presented) Method according to Claim 10, characterized in that the further electrode is an electrode of the catheter.

PAGE 5/11 * RCVD AT 2/25/2005 9:58:04 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5053230865 * DURATION (mm-ss):04-02

12. (Previously Presented) Method according to Claim 10, characterized in that the further electrode is an external electrode.

13. (Previously Presented) Method according to Claim 10, characterized in that the solution contains halogen ions.

14. (Previously Presented) Method according to Claim 13, characterized in that the solution contains chlorine ions.

15. (Previously Presented) Method according to Claim 10, characterized in that the solution contains NaCl in a range from 0.1 to 100 g/l.

16. (Previously Presented) Method according to Claim 15, characterized in that the solution contains NaCl in an amount of approximately 7 g/l.

17. (Previously Presented) Method according to Claim 10, wherein the solution contains ions of a metal salt.

18. (Previously Presented) Method according to Claim 10, characterized in that the applied voltage is an AC voltage.

19. (Previously Presented) Method according to Claim 18, characterized in that the applied AC voltage contains components which have a frequency of more than 0.01 Hz and less than 10 kHz.

20. (Previously Presented) Method according to Claim 18, characterized in that the applied AC voltage contains components which are in a frequency range from 1 to 100 Hz.

21. (Previously Presented) Method according to Claim 10, characterized in that the applied AC voltage is in a range from 0.1 to 100 V_{eff}.

22. (Previously Presented) Method according to Claim 20, characterized in that the applied AC voltage is in a range from 1 to 10 V_{eff}.

PAGE 6/11 * RCVD AT 2/25/2005 9:58:04 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5053230865 * DURATION (mm-ss):04-02

23. (Previously Presented) Method according to Claim 20, characterized in that the applied AC voltage is at 3 to 7 V_{eff}.

24. (Previously Presented) Method according to Claim 10, characterized in that an AC current which generates an AC voltage is impressed on the ablation or mapping electrode and the further electrode.

25. (Previously Presented) Method according to Claim 24, characterized in that the AC voltage has, per ablation or mapping electrode, a current intensity of from 1 mA_{eff} to 1 A_{eff}.

26. (Previously Presented) Apparatus for catheter treatment, comprising:

a vessel for holding an electrolytic solution and regions of the catheter,

an electrolytic solution in the vessel, wherein the ablation or mapping electrode and the further electrode can be wetted by the electrolyte during conducting of the catheter treatment,

a voltage-generating or current-generating unit, and

a connection device for connecting at least one ablation or mapping electrode of the catheter and a further electrode to the voltage-generating or current-generating unit.

27. (Previously Presented) Apparatus for catheter treatment according to Claim 26, wherein the voltage-generating or current-generating unit comprises an internal unit mechanically connected to the vessel.

28. (Previously Presented) Apparatus for catheter treatment according to Claim 26, wherein the voltage-generating or current-generating unit comprises an external unit not mechanically connected to the vessel.

PAGE 7/11 * RCVD AT 2/25/2005 9:58:04 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5053230865 * DURATION (mm-ss):04-02

29. (Previously Presented) Catheter for the ablation of biological, in particular of animal or human, tissue, preferably for the ablation of human myocardial tissue, having at least one ablation or mapping electrode, characterized by being produced or treated in accordance with a method according to Claim 10.

30. (New) Catheter according to claim 1, characterized in that the surface of the at least one ablation or mapping electrode has a radius of curvature of more than 10nm.

31. (New) Catheter according to claim 1, characterized in that the surface of the at least one ablation or mapping electrode has a radius of curvature of more than approximately 500nm.

PAGE 8/11 * RCVD AT 2/25/2005 9:58:04 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5053230865 * DURATION (mm-ss):04-02